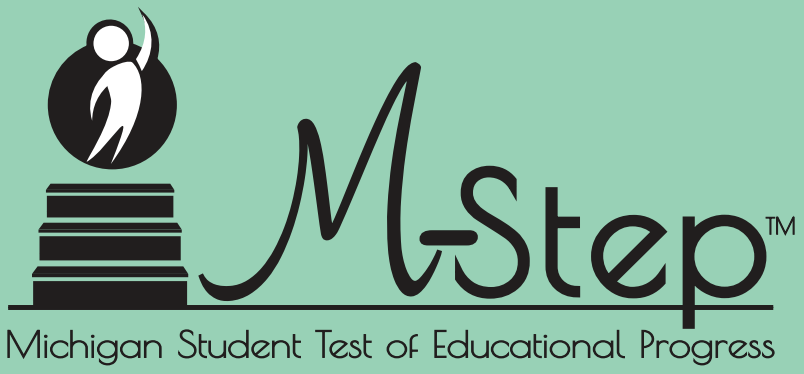
Student Name _____

FS



11th

Sample Items

SCIENCE

Spring 2015

MICHIGAN Department of Education

Form S

MICHIGAN STATE BOARD OF EDUCATION
STATEMENT OF ASSURANCE OF COMPLIANCE WITH FEDERAL LAW

The Michigan State Board of Education complies with all Federal laws and regulations prohibiting discrimination and with all requirements and regulations of the U.S. Department of Education. It is the policy of the Michigan State Board of Education that no person on the basis of race, color, religion, national origin or ancestry, age, sex, marital status, or handicap shall be discriminated against, excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination in any program or activity for which it is responsible or for which it receives financial assistance from the U.S. Department of Education.

The sample items included in this set can be used by students and teachers to become familiar with the kinds of items students will encounter on the paper/pencil summative assessments. The sample items demonstrate the rigor of Michigan's academic content standards. They are not to be interpreted as indicative of the focus of the M-STEP assessments; they are simply a collection of item samples. Every standard is not included in this sample set.

DIRECTIONS

This test has XX multiple-choice questions that will help you demonstrate your understanding of science. Some questions will include a graph, table, or other science-related information. Use that information along with what you already know to answer the questions.

You must mark all of your answers on your **Answer Document** with a No. 2 pencil. You may underline, circle, or write in this test booklet to help you, but nothing marked in the test booklet will be scored.

Mark only one answer for each question. Completely fill in the corresponding circle on your **Answer Document**. If you erase an answer, be sure to erase it completely. Remember that if you skip a question in the test booklet, you also need to skip the answer space for that question on the **Answer Document**. If you are not sure of an answer, mark your **best** choice.

A Periodic Table of the Elements has been provided for your reference on the next page.

A **STOP** sign will indicate that you have reached the end of the test. If you finish early, you may go back and check your work. Be sure you have answered every question.

Wait to turn the page until you are told to do so.

WAIT

Periodic Table of the Elements

IA	IIA	IIIB	IVB	VB	VIB	VIIB	VIIIB			IB	IIB	IIIA	IVA	VA	VIA	VIIA	VIIIA
1 H 1.0080																	2 He 4.0026
3 Li 6.94	4 Be 9.012											5 B 10.811	6 C 12.0115	7 N 14.0067	8 O 15.9994	9 F 18.9984	10 Ne 20.18
11 Na 22.9898	12 Mg 24.31											13 Al 26.9815	14 Si 28.086	15 P 30.974	16 S 32.06	17 Cl 35.453	18 Ar 39.948
19 K 39.102	20 Ca 40.08	21 Sc 44.96	22 Ti 47.90	23 V 50.94	24 Cr 51.996	25 Mn 54.938	26 Fe 55.847	27 Co 58.933	28 Ni 58.71	29 Cu 63.546	30 Zn 65.37	31 Ga 69.72	32 Ge 72.59	33 As 74.9216	34 Se 78.96	35 Br 79.909	36 Kr 83.80
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc (97.9)	44 Ru 101.07	45 Rh 102.91	46 Pd 106.4	47 Ag 107.868	48 Cd 112.40	49 In 114.82	50 Sn 118.69	51 Sb 121.75	52 Te 127.60	53 I 126.904	54 Xe 131.30
55 Cs 132.91	56 Ba 137.34	* 57 La 138.91	72 Hf 178.49	73 Ta 180.95	74 W 183.85	75 Re 186.2	76 Os 190.2	77 Ir 192.22	78 Pt 195.09	79 Au 196.97	80 Hg 200.59	81 Tl 204.37	82 Pb 207.2	83 Bi 208.98	84 Po (209)	85 At (210)	86 Rn (222)
87 Fr (223)	88 Ra 226.0	♦ 89 Ac 227.0	104 Rf (261)	105 Db (262)	106 Sg (263)												

*Lanthanoid series	58 Ce 140.12	59 Pr 140.91	60 Nd 144.24	61 Pm (145)	62 Sm 150.4	63 Eu 151.96	64 Gd 157.25	65 Tb 158.9	66 Dy 162.50	67 Ho 164.93	68 Er 167.26	69 Tm 168.93	70 Yb 173.04	71 Lu 174.97
♦Actinoid series	90 Th 232.0	91 Pa 231.0	92 U 238.03	93 Np 237.0	94 Pu (244)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (252)	100 Fm (257)	101 Md (258)	102 No (259)	103 Lr (262)

GO ON

1 The formulas HCl, H_2SO_4, and H_2CO_3 represent what type of compounds?

A acids

B salts

C bases

D hydroxides

2 One main function of the kidney is filtering certain minerals from blood and eliminating them from the body. Which two body systems **primarily** facilitate this function?

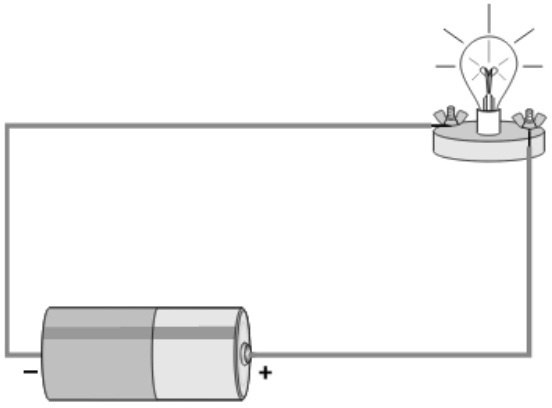
A immune and digestive

B nervous and respiratory

C reproductive and skeletal

D circulatory and excretory

3 A student constructed the simple circuit shown below.



Simple Electric Circuit

What will occur if the student replaces the light bulb with a higher resistance light bulb?

A The voltage will increase.

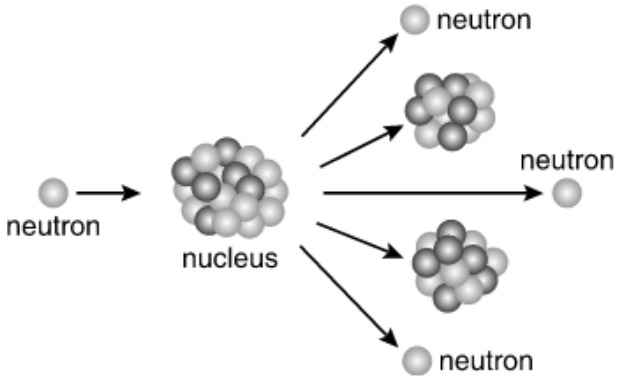
B The current will decrease.

C The battery will gain stored electrical energy.

D The light bulb will go out due to a short circuit.

GO ON

4 Use the diagram below to answer the question.



Which technology utilizes this process to obtain energy to generate electricity?

A solar cell

B combustion turbine

C nuclear fission reactor

D nuclear fusion generator

GO ON

Item Number	Correct Answer	Standard/ Benchmark	Description
1	A	C5.7A	Recognize formulas for common inorganic acids, carboxylic acids, and bases formed from families I and II.
2	D	B2.5B	Explain how major systems and processes work together in animals and plants, including relationships between organelles, cells, tissues, organs, organ systems, and organisms. Relate these to molecular functions.
3	B	P4.10D	Discriminate between voltage, resistance, and current as they apply to an electric current.
4	C	P4.12A	Describe peaceful technological applications of nuclear fission and radioactive decay.

FS

11th

MICHIGAN Department of Education

Office of Standards and Assessment (OSA)
Phone: 1-877-560-8378
Website: www.michigan.gov/baa
Email: baa@michigan.gov